INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

CORRECTIVE ACTION PLAN FORM SWF-18

329 IAC 10-21-13

SF 50394 (7-01)

To begin:

This form shall be used to submit a corrective action plan when required under the criteria established at 329 IAC 10-21-13(a). Corrective action plans, along with support documentation, should be submitted to:

Office of Land Quality (N1154)
Solid Waste Permits Section
Indiana Department of Environmental Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

I. GENERAL INFORMATION

A. Facility Name: _____

B. Facility Location: _____

C. Facility County: _____

D. Facility Solid Waste Permit No. _____
(if existing permitted facility)

E. Total Fill Acreage _____

II. CORRECTIVE ACTION CONTACTS

A. FACILITY OWNER

1. Name: _____

2. Address: _____

_____

3. Telephone no: _____

B. OPERATOR

1. Name: _____

2. Address: _____

_____

3. Telephone no: _____

Although this corrective action form is being provided to aid you in preparing your corrective action plan in accordance with the new rules, this form is still a draft version of corrective action plan SWF-18 currently under review and subject to final approval. Please consult the actual rule language. 8/99

C. PERMITTEE

1. Name: _____

2. Address: _____

_____

3. Telephone no: _____

PART I - CORRECTIVE ACTION PLAN, ASSESSMENT OF CORRECTIVE MEASURES AND COST ESTIMATE

I. CHARACTERIZATION OF CHEMICAL AND PHYSICAL NATURE OF CONTAMINANTS - Provide a brief characterization of the chemical and physical nature of the contaminants, including vertical and horizontal extent of the release (attach additional sheets as necessary). Include an identification of all constituents to be analyzed during subsequent ground water sampling events

II. CHARACTERIZATION OF THE CONTAMINATED AQUIFER - Provide a summary characterization of the contaminated aquifer, limited to the area of the contamination plume. This characterization may include all the items listed under 329 IAC 10-21-13(b). Attach additional sheets as necessary.

III. DESCRIPTION OF PROPOSED LOCATION AND INSTALLATION PROCEDURES FOR ADDITIONAL MONITORING WELL(S) - Provide a description of the proposed location and installation procedures of proposed additional ground water monitoring wells. At least 1 well must be located at the facility boundary in the direction of contaminant migration. Attach additional sheets as necessary.

IV. DESCRIPTION OF PUBLIC NOTIFICATION PROCESS - Provide a brief description of the process with which you provide notification concerning the ground water contamination to all persons who own or reside on land that directly overlies any part of the contaminated ground water plume. Attach additional sheets as necessary.

V. DESCRIPTION OF SAMPLING AND ANALYSIS PROGRAM FOR DRINKING WATER INTAKES - Provide a brief description of the process with which you will sample and analyze ground water at any private or public drinking water intakes (as specified by the commissioner). If permission to sample a private intake cannot be obtained from its owner, please note for each such intake. Attach additional sheets as necessary.

VI. DESCRIPTION OF DRINKING WATER PROVISION - Provide a brief description of how you will supply drinking water to all public and private ground water drinking water intakes affected by the contamination. Attach additional sheets as necessary.

VII. DESCRIPTION OF PROCEDURES TO STOP MIGRATION - Provide a brief description of the procedures you will use to stop further migration of contaminants. Attach additional sheets as necessary.

VIII. ASSESSMENT OF CORRECTIVE MEASURES. Attach additional sheets as necessary.

A. General Performance Factors and Impacts - Briefly describe for each potential corrective measure the following factors: performance, reliability, ease of implementation, time required, and potential impacts (including safety impacts, cross-media impacts, and control of exposure to any residual contamination).

VIII. ASSESSMENT OF CORRECTIVE MEASURES - Continued (attach additional sheets as necessary)

B. Implementation costs - Detail, for each proposed corrective measure, an estimate of the costs to implement the measure. Please note that these costs are not included in the correction action cost estimate and should not be duplicated there.

VIII. ASSESSMENT OF CORRECTIVE MEASURES - Continued (attach additional sheets as necessary)

C. Institutional Requirements - Provide a summary, for each corrective measure, of each state or local permit requirement, or other environmental or public health requirement, that may substantially affect implementation of the measure.

VIII. ASSESSMENT OF CORRECTIVE MEASURES - Continued (attach additional sheets as necessary)

D. Public Meeting - Discuss briefly how you will conduct the assessment of corrective measures public meeting in accordance with 329 IAC 10-21-12.

IX. CORRECTIVE ACTION COST ESTIMATE - Please note that cost estimates are needed only for steps and regularly scheduled maintenance activities not yet completed; enter "N/A" in completed areas. Attach additional sheets as necessary.

A. Cost for Characterization of Plume

1. **Determining Additional Assessment Ground Water Well Locations**

a. Number of site visits needed to to determine well locations _____

b. Number of personnel needed per site visit _____

c. Time required per visit (hrs/visit) _____

d. Personnel time labor cost ($/hr) _____

e. On-site location determination cost ($)
Line 1.a * line 1.b * line 1.c * line 1.d _____

f. Time spent in off-site data review and analysis (hrs) _____

g. Number of personnel involved in off-site review and analysis _____

h. Off-site data review and analysis cost
Line 1.f * line 1.g _____

i. **Total, Well Determination Costs**
Line 1.e + line 1.h _____

2. **Assessment Monitoring Well and Sampling Equipment Installation Cost**

a. Number of assessment monitoring wells to be installed
(note: at least 1 well at at facility boundary required) _____

b. New monitoring well construction unit cost ($)
(note: drilling is charged by foot) _____

c. Monitoring well installation cost ($)
Line 2.a * line 2.b _____

d. Number of pumps/bailers to be installed _____

e. Pump/bailer unit cost ($/pump) _____

f. Pump/bailer installation cost ($)
Line 2.d * line 2.e _____

g. **Total, Assessment Monitoring Well and Sampling Equipment Installation Cost ($)**
Line 2.c + line 2.f _____

3. **Assessment Ground Water Monitoring Cost**

a. Number of required assessment monitoring wells _____

b. Monitoring frequency _____

c. Sampling field costs

1) Unit sampler labor costs ($/hr) _____

2) Number of samplers/well _____

3) Average sampling time/well _____

4) Labor costs ($/well)
Line 1) * line 2) * line 3) _____

5) Total labor costs
Line a. * line b. * line c.4) _____

6) Mileage costs ($/mile) _____

7) Miles, round trip per visit _____

8) Total transportation costs/visit
Line 6) * line 7) _____

9) Field documentation cost/visit _____

10) Field meter equipment rental cost/visit _____

11) Miscellaneous equipment cost/visit _____

12) Blanks, duplicates, other QA/QC samples cost/visit _____

13) Sampler safety equipment, containers and preservatives cost/visit _____

14) Storage and thermal preservation cost/visit _____

15) Chain-of-custody documentation cost/visit _____

16) Total, sampling field costs
Line 3.c.5 + (line 3.b * (lines 3.c.8 + 3.c.9 + 3.c.10 + 3.c.11 + 3.c.12 + 3.c.13 + 3.c.14 + 3.c.15)) _____

d. Analysis costs

1) Laboratory Analysis Costs per Sample, Assessment Monitoring Parameters

Table 2 (329 IAC 10-21-16) _____

2) Reporting Costs Per Visit _____

3) Statistical Analysis of Data Per Visit

a) Statistical evaluation _____

b) Reporting costs _____

c) Total, statistical analysis of data cost/visit Line a) + line b) _____

4) Geologic Interpretation Per Event

a) Preparation of piezometric contour map _____

b) Reporting costs _____

c. Total, geologic interpretation costs/visit Line a) + line b) _____

5) Total, analysis costs (Line d.1) * (45) + (lines d.2 + d.3.c + d.4.c) * (15) _____

6) **Total, Assessment Ground Water Monitoring Cost ($)** Total sampling field costs (line 3.c.16) + total analysis costs (line 3.d.5)) _____

4. **TOTAL COST, CHARACTERIZATION OF PLUME ($)** Line A.1.i + line A.2.g + line A.3.d.6 _____

B. Cost for Notification of Residents/Landowners Above Contaminated Plume

1. Number of estimated residents/landowners requiring notification _____

2. Cost to prepare notice, including copying _____

3. Cost to certify mail notice _____

4. **TOTAL COST, NOTIFICATION OF RESIDENTS/LANDOWNERS ABOVE CONTAMINATED PLUME** (Line B.1 * line B.3) + line B.2 _____

C. Cost for Sampling and Analysis of Ground Water at Drinking Water Intakes

1. Number of area intake wells affected by contaminated plume _____

2. Monitoring frequency _____

3. Sampling field costs

   a. Unit sampler labor costs ($/hr) _____

   b. Number of samplers/well _____

   c. Average sampling time/well _____

   d. Labor costs ($/well)
   Line 3.a * line 3.b * line 3.c) _____

   e. Total labor costs
   Line 1 * line 2 * line 3.d _____

   f.. Mileage costs ($/mile) _____

   g. Miles, round trip per visit _____

   h. Total transportation costs/visit
   Line f. * line g. _____

   i. Field documentation cost/visit _____

   j. Field meter equipment rental cost/visit _____

   k. Miscellaneous equipment cost/visit _____

   l. Blanks, duplicates, other QA/QC samples cost/visit _____

   m. Sampler safety equipment, containers and preservatives cost/visit _____

   n. Storage and thermal preservation cost/visit _____

   o. Chain-of-custody documentation cost/visit _____

   p. Total, sampling field costs
   Line C.3.e + (line C.2 * (lines C.3.h + C.3.i + C.3.j + C.3.k + C.3.l + C.3.m + C.3.n + C.3.o)) _____

4. Analysis costs

   a. Laboratory Analysis Costs per Sample, Assessment Monitoring Parameters

   Table 2 (or approved subset) (329 IAC 10-21-16) _____

b. Reporting Costs Per Visit _____

c. Statistical Analysis of Data Per Visit

1) Statistical evaluation _____

2) Reporting costs _____

3) Total, statistical analysis of data cost/visit
Line 1) + line 2) _____

d. Total, analysis costs
(Line 4.a) * (45) + (lines 4.b + 4.c.3) * (15) _____

5. **Total, Intake Monitoring Cost ($)**
Total sampling field costs (line 3.p)
+ total analysis costs (line 4.d.) _____

D. Costs for Supplying Drinking Water to Residents Dependent On Ground Water Intakes Affected by the Contamination _____

E. Costs for Procedures to be Implemented to Stop Further Migration of Contaminants _____

F. Cost for Assessment of Corrective Measures

1. Number of personnel involved _____

2. Preparation hours (hrs) _____

3. Total Assessment Cost
Line 1 * line 2 _____

G. TOTAL, CORRECTIVE ACTION COST ESTIMATE
Line A.4 + line B.4 + line C.5 + line D. + line E. + line F.3 _____

PART II - SELECTION OF CORRECTIVE MEASURE

(in development, do not use this part of form at this time)